# NEW ELECTRIC ENGINE

**WONDERFUL SPEED OF 200 MILES AN HOUR ALREADY MADE.**

**Fastest Locomotive in the World, Which Will Necessitate Elevation of All Railroad Tracks.**

New York Herald.

A locomotive that will run two hundred miles an hour has just been completed at the Baldwin locomotive works, in Philadelphia, and the Westinghouse Electrical Company has had a hand in its construction. It is called the Lightning Express Electric Locomotive. Nothing that resembles it has ever been constructed. It is announced that with this locomotive a speed of 120 miles an hour has been made privately. This would bring Chicago within five hours' ride of New York and 'Frisco within fifteen hours. It would take only a half hour to go to Philadelphia. It would be possible to live in Boston and do business in New York, and as for the suburbs, if trains were drawn by the electrical locomotive, it would not be much more of a trip to the New Jersey towns than it is to the Battery from City Hall Square.

In appearance the new locomotive gives hardly a suggestion of the speed. There is little mechanism visible, as the motors are hidden in jackets of steel. With the exception of the driving wheels, whose strength and solidity are not so apparent from their size as from their construction, the locomotive has the appearance of an ordinary baggage car. Of course, it is superior in finish to such a vehicle, and its fittings are immeasurably more handsome.

While not in the least resembling the conventional locomotive in outward appearance, this one is considered the most complete in the world. The frame is made of ten-inch rolled steel channels, surrounded by a half-inch rolled steel plate, covering the entire floor. This plate is an important detail, as it gives great strength to resist blows in collision. The frame is carried on two trucks, which have all the easy riding features of car trucks—that is, soft springs, swinging motion and free movement.

This is positively the first electric express engine. The few electric locomotives that have heretofore been built have all been to haul freight trains or to run at a low rate of speed.

Perhaps the most interesting feature from a railroad standpoint is that the trucks are of the swivelling type, which permits the locomotive to pass around any curve that can be passed by a regular freight engine car, which is a performance not possible with steam express locomotives. The geared connection between the electric motors and the axles permit the use of any sort of gear ratio that is suitable to the desired speed, and make this locomotive adapted in all mechanical details for slow or high speed. By reason of the peculiar and simple construction of the trucks and the geared connection between the axle and motors, the same locomotive is adapted for both the direct current and the Tesla system.

PARALLEL DRIVING RODS.

In this engine every feature that will reduce loss of motion even by a fraction of a second has been carefully considered. The driving wheels are so arranged that they may be coupled with parallel rods when the train to be hauled is heavy, as such rods will not permit one pair of wheels to slip without slipping the other. This is of the utmost importance, especially at starting. The weight of the locomotive is 150,000 pounds; in length it is thirty-seven feet over the pilots.

Inside of the locomotive a small space is taken up by a controller at either end, the controller being operated from both ends of the locomotive. The controller takes the place of the throttle and is the reversing lever on the steam locomotive. It is a device for switching the current in different ways through the moter. In starting the electric locomotive, as in starting a steam locomotive, the direct electric current has to be choked or cut down just as the steam pressure is choked down by the throttle valve; that is, the electric current has to be throttled as well as the steam current.

To do this on an electric locomotive, a considerable amount of resistance is provided in the shape of bands or strips of iron or nickel steel. This resistance is subdivided into a considerable number of parts, so that it can be cut down gradually, just as notches are provided on the throttle lever quadrant. Instead of the notches, the resistance is provided with contacts, over which slide the movable switches which make the electric connection. It is the office of the controller to move the switches in the proper way. The controller is divided into two parts, the switches for the resistance and the switches for the motors. The resistance switches vary the resistance, as desired. The switches for the motors change the path of the current, so that either divides and passes through the motors independently—that is, in "multiple," or passes first through one motor and then the other. The motors are directly beneath the car bed, between the two trucks of the lightning electric express, and are "iron clad," consequently pole motors. These motors are entirely encased by thin steel shells, so that they are practically free from injury under all normal conditions of service.

The armatures are laminated and are made up of thin slotted disks of steel. In the slots are placed the armature wires. The commutors are of the best forged copper with mica insulation. The motors have the highest grade of insulation.

THIRD RAIL SYSTEM.

Power is furnished from a central station. It is communicated to the electric express by the third rail system, a system which conducts the current to moving motors or trains by means of an additional rail, either of iron, steel or copper, laid in the track at about the same height as the main rail. The marvels to be accomplished by this great giant of the electric age are not in theory. On the experimental track in the yards of its builders, along which it has been run, such terrific and unheard-of speed has been attained as to permit the conservative announcement to be made that the average speed of 150 miles an hour can be maintained for almost any distance. The enormity of the record-breaking possibilities of the invention can scarcely be exaggerated. In an instant the world shrinks and becomes one-third the size it is to-day.

It will be some time before the electric locomotive will have a chance to perform its work of revolution in transportation. Millions must be expended before even the most enterprising railroad could be properly equipped for the new express, and the motor power of the road changed from steam to electricity. David L. Barnes, the electric expert of the Baldwin & Westinghouse Companies, in speaking of the wonders of the new lightning express, said that the entire signal systems of railroads must be changed before the lightning express can run. Signals are now at points only a mile apart, while with the new electric marvel it will require a clear way of one and a half miles to stop the express. There must be no grade crossing. The track must be elevated.

M. Barnes said: "There will be no difficulty in collecting all the current with a sliding contact for a speed of over one hundred miles an hour. I may say that very high-speed electric railroads are yet in their infancy. The greater number of problems connected with such services are pretty definitely settled. Those that remain are receiving daily attention, and when railroad companies build a safe and suitable roadbed the locomotives and the power to drive them are ready for immediate application, without the risk of losses from experiments and uncertain construction. The electric express only awaits the roadbed and equipment to fairly leap across the continent. And that is the minor part, only requiring capital. The engineering part has been practically solved."

Mr. Barnes makes the following prediction for the locomotive: "The locomotive will make 150 miles just as easy as 120 when the track is suitable. The power is all sufficient from the central station, and the apparatus is adapted for any speed up to two hundred miles an hour. For higher speed we use slightly larger wheels, less wire on the motors and different gear ratio."

**Pensions for Veterans.**

Certificates have been issued to the following-named Indianians:

Original—William A. Henderson, Boswell.

Increase—Winfield S. Geiger, Bowling Green; Pinny Hardy, Austin; Rufus Neal Portland; Francis H. Powell, Jordan Village; Parker S. Carson, Indianapolis; Aaron M. Gunckel, Green Fork; Francisco Yajalo, Buck Creek; John P. Norman, Ireland; George W. McDonald, Mifflin; William S. Smurr, Rome City; John C. Brand, Waterloo.

Reissue—John Richardson, Angola; Levi Huffstutter, Palmyra.

Original Widows, etc.—Elmira Ellison, Terre Haute; Martha J. Abplanalp, Sunman; Mary A. Purcell, Pleasantville; Mary A. Smith, South Boston; Jane Helen Kelly, Goshen.

# MIRACLES IN '96.

**A Modern Pool of Bethesda at Lourdes —Faith Cures or What?**

London Mail.

I have just returned from the most wonderful place in the world. Two years ago Zola made a scoffing novel of it; in thirty years 2,000,000 faithful ones have made a holy shrine of it. Only Zola could scoff at Lourdes. The man who does not believe in its supernatural claims may wonder at it, but when he sees the thousands who gather there each year, among them some of the most intelligent and cultured folk in France, he does not scoff. He merely marvels, fascinated. Such an illustration of what limits human faith can reach is not to be seen elsewhere in any civilized land. The Mussulman goes to Mecca and is willing to die for it, but there is this difference between Lourdes and Mecca. The Mecca pilgrims go from pure devotion; those who swarm to Lourdes do so in order to obtain favors from heaven.

Lourdes is a village in the extreme south of France, and so many pilgrims flock thither that the French government sanctions and arranges for a great pilgrimage at reduced railway rates each year. This year's pilgrimage included more than 42,500 persons, and it is believed that at least as many visit the shrine at other seasons, who do not care to mingle with this great crowd descending on the little village in one day.

The genuineness of most of the cures is no longer questioned in France. Sceptical scientists admit the cures, though they deny their miraculous nature. They further claim that the pilgrimages kill more than they cure. It has been, of course, utterly impossible for me to learn anything concerning this, but if many who start for Lourdes desperately ill do not die from the intense excitement, from exposure or from the strain of unusual effort, the fact is not less wonderful than the cures.

The White train and the Blue train are national affairs. At the time of the national pilgrimages they offer very cheap transportation to those whose priests and doctors certify that they are fit subjects for the miraculous powers of Lourdes. Only the sick and their friends can purchase tickets by these trains. Therefore, only those whose appeals to human power have been wholly useless are permitted to travel by them. Rosy cheeks and strong lungs are stopped at the doors of the Gare St. Lazare and the Gare de Lyon when these trains are booked to start, and the man who witnesses the embarkation sees a sight which can never fade from memory. Mortal pain is everywhere before him. To these stations and others along the road come bed-ridden, come the blind, come the consumptive, come those with twisted spines, with clubbed feet, with shrivelled limbs, with palsied hands, with asthma, with apoplexy, with St. Vitus's dance, with every imaginable disease that can be classed as chronic. Those whose ailments are avowedly contagious are not permitted by the priests to start.

It is a procession of agony that finds its way to these two awful trains, each one carrying some mortal hurt. Some limp, some stumble with canes, some hobble on crutches, some writhe on carefully swung litters lifted by the loving hands of relatives or priests.

With almost every group is a priest in robes easing crutches, binding sores; to each car is a sister trained to nurse, pale of face, soft of voice, as sympathetic as constant association with desperate agony permits, lifting with tired arms dead bodies from which living eyes look mutely up; these three classes—the pilgrims, the priests, the sisters—make up the Blue and White trains. There are no physicians. The sick are appealing to a power higher than that possessed by men of medicine.

In the railway carriages are scenes beyond description. Litters in which the wholly helpless are bound lie in some of the seats, which run across the carriages, leaving room at one end for a forlorn but less afflicted sufferer to crouch; in one carriage I saw three bed-ridden beings stretched—two on the seat, one on the floor between them. Some of the direly afflicted creatures are so bandaged with plaster molds or other surgical safeguards that entry into the narrow compartments is rendered impossible. These may be laid on the floor of luggage vans, while others in their litters are swung by ropes from the roof above them.

I went to Lourdes by the ordinary express. Even this train, by which the fares are very high, was by no means without its quota of unfortunates.

We left Paris at 7:50 p. m. and reached Lourdes at about 3 on the following afternoon. Nearly every carriage in the train had its invalid or invalids.

The journey was rendered weird and strange by the devotional chants which rang solemnly out from a hundred carriage windows.

At 4 o'clock the first division of the white train arrived. If the scene at the station when our train gave up its passengers was startling, the scene when the white train vomited forth its cargo of unfortunates was not less than awful. These were the poorer pilgrims—those who took advantage of the reduced fares. Most of them came in the third-class carriages. Exhausted by the long journey, they looked even more dreadful than when they embarked. I am told that seven unhappy creatures died on the way.

There were at least a hundred priests to meet the train, and these passed in and out of the throng, comforting and exhorting all to have faith. Sisters of Mercy and nuns were everywhere, and there were enough litters, chairs, and wheeled beds to convey the whole army of helpless ones to the healing shrine. As if by magic the faces of the sufferers seemed to brighten; pains were forgotten for the moment, in the realization that they had at length reached Lourdes. From that time the little village became the scene of events of the most solemn and impressive character. That night thousands of pilgrims wended their way to the chapel, perched high up on the hill, and carved out of the solid rock. In front of the procession were wheeled the bedridden, in all manner of nondescript conveyances, and everywhere, scattered along the lines, were the lame, the halt, and the blind, some of them assisted by sturdier pilgrims, others hobbling along unaided. The night processions at Lourdes are spectacles such as are not to be seen elsewhere in the whole world.

But, of course, the interest centers most round the actual place of healing, the grotto. It is a little cave whose roof of rocks is smoked black, the smoke having risen from the candles brought by countless devout sufferers. In one niche is a statue of the Virgin, and it is on this that the pleading gaze of those seeking cure is fixed. Beneath the statue, and again in a great mass at the grotto's left, are hung the implements of illness which have been discarried by the people who have been miraculously cured at the shrine. There are five thousand crutches; there are iron frames for twisted limbs; there are parts of invalid's chairs; there are trusses. Some of them are new, others smoked by the candles, or worn by the weather, give mute testimony of the cures of years gone by. There was never a moment during my eleven days in Lourdes when there were not many people at the grotto. In the day the crowds, of course, were vast, and midnight came before the mass of pilgrims had withdrawn to go to the hospital.

And now for the cures. Pilgrims going to Lourdes by the official trains in the official way must carry with them certificates from their local doctors, telling what their illness is in detail. These they must present in case of a cure at the Bureau des Contestations to the authorized medical staff.

The first cure of this year's national pilgrimage was a girl named Louise Rieutemann. She is seventeen years old, and her home is in Viroflay.

She hobbled to the grotto with her left side in a surgical frame. Next to the grotto are the baths—one for women, one for men—and she was the very first to be dipped in the waters.

The next day she was walking alone, followed by a singing, excited mob, driven frantic over the news that she had been cured.

Whatever one's opinion of the cures at Lourdes may be, one cannot be but impressed by the simple, unswerving faith which prompts the pilgrims to journey thither from the remotest parts of France, and each year the pilgrimages grow in importance and strength. One family of father, mother and two sons walked from Calais to Lourdes, carrying a bed-ridden girl on a litter. When they reached Lourdes they were utterly without money. I gave them a few sous for posing before my camera, and they spent them in buying candles to burn at the grotto. I gave them more, and they bought more candles. This is merely one example of the touching devotion and childlike faith which makes Lourdes a wonderful place.

In France there is a law compelling physicians to write their prescriptions in the language of the country.

# PROBLEM NOVEL PASSING

**AN OLD BOOKSELLER'S VIEWS ON THE RENAISSANCE OF ROMANCE.**

**He Believes the Analytical, Problematical and Paradoxical Novels Have Had Their Day.**

New York Evening Post.

If the word of certain publishers in this city is to be credited, the taste of the novel-reading public has for some time past been undergoing a remarkable change. The desire for morbid literature, which long prevailed, has given way before a revival of interest in the romantic—in that class of reading matter which amused our grandfathers and grandmothers at a time when novels were designed to amuse.

An old New York bookseller, notorious among his brethren as a hopeless Philistine, has long been interested in watching the fluctuations of taste on the part of the public, and has arrived at the conclusion that the "modern" novel has nearly run its course.

"The world," said he yesterday, "has at last grown weary of learning morals out of novels, and now seeks eagerly after the entertainment it once expected to find in them. At least, I can positively make this assertion in so far as New York is concerned, for by carefully watching the publishers' and booksellers' lists I am convinced that the novels now in vogue are not about women who did, and heavenly twins and yellow asters and things, but books of adventure, romances, good stories and old-fashioned novels, such as pleased the simple minds of our ancestors."

"Then do you think that the so-called modern novel is forever dead?"

"That," he replied, "I cannot venture to say. These things go in waves. It happened that some years ago a great wave of extreme seriousness struck us. Then, for a book to be capable of giving enjoyment came to be a proof of its triviality; to bore, a guarantee of its good quality. Such a thing as action was considered vulgar or commonplace, but morbid psychology and the pathology of marriage were very fit subjects for the pen of the novelist. Then humor was carefully avoided—to amuse was an unpardonable offense."

"What, then, were the qualities most admired in an author?"

"That depended altogether on the character of his book. Depth was one quality that called forth praise. The men and women in the book would act from extraordinary motives, which were always kept very dark from the reader. This kind of novel was generally rather mystical, and must by no means be confounded with the merely paradoxical novel, in which there were no motives whatever, hidden or revealed, but where the characters acted simply out of pure 'cussedness.' The paradoxical novel was a very trivial thing compared with the novel of mysterious motives."

MINUTE DISSECTION.

"But is not the analysis of motives just what the modern novelist plumed himself on?"

"Certainly. But, as I say, it depended on the style of the book. Oh, there were novels in which all actions, except the more important ones, were dissected and laid open before the reader. Thus, if a man happened to brush his hat or knock off the ash of his cigarette, it would take fully four pages to explain why he did so. These were known as analytical novels."

"Then there was the risky novel, was there not?"

"Oh, no. The risky novel belonged to another time. The word 'risky' stamped a book at once as trivial. A new word was applied to the modern equivalent of the risky novel."

"What was that?"

"'Bold.' A novel was bold in proportion to its indecency. Sometimes it was called daring, but the word signified the same thing. A novel treating of heredity was called bold and daring, and if an author made a violent attack on marriage he was said to be brave, and to look sternly and unflinchingly at life's problems."

"And what were the favorite subjects of these authors?"

"Oh, their subjects didn't differ very much from those of the old-fashioned novelists. They used love and marriage a good deal, but the difference lay in the treatment. For instance, in the matter of marriage, it wasn't a question of who would marry whom, but whether, if such a one were to marry such a one, the children would be likely to be healthy. Or, again, whether marriage was at all advisable. In fact, whatever the subject, there was always a purpose hidden away somewhere or other. Of course, sometimes the purpose was so well hidden that no one could find it. In such cases it was generally agreed, however, that there was a purpose, though no one professed to know exactly what it was."

"Do you think there is any possibility of the problem novel reviving?"

"It is possible. But it is certain that it no longer holds the place it once did. The fact is, it committed suicide. The analytical and problem novel so trained the public to the habit of taking things seriously, and of analyzing everything, that at last readers fell to considering seriously the analytical novel itself, and to analyzing the problem novel—the result being that they came to the conclusion that it bored them intensely. The women helped a good deal toward this conclusion. Never were there so many women in the field of letters as when the 'modern' novel was in vogue, and they quite outdid the men in modernity, to use the cant of the day. For suggestiveness, morbidity and nastiness, commend me to the woman novelist. A man cannot pretend to compete with her."

THE PUBLIC IS TRIED.

"And you really think that readers are tired of these novels?"

"I have not the least doubt of it. Considder what have been the most popular novels recently. 'Trilby' and 'Peter Ibbetson,' to mention no other, were both of a very romantic kind. Then there are Stanley Weyman, Anthony Hope, Robert Barr, Barrie—"

"Oh, but these represent only one set of writers. There are many other novelists, who—"

"Well, to set them apart, I can give you other evidence to support my statements. In the first place, there has been a decided revival of the taste for Scott. Stevenson also is very popular. Then you will find that many new editions have been appearing within the last couple of years of Fielding, Smollett, Cervantes and other of the old writers, and I am convinced that the taste for their works is reviving. Then look at the stage. You cannot fill a house to-day with Ibsen and Maeterlinck, that is now an acknowledged bore. Far fewer persons than formerly will tolerate such dialogue as this, for instance," and the old Philistine reached for a book from one of the shelves of his shop.

"'Such as this,' he replied:

"'I see the lighthouse.'

"'You see the lighthouse?'

"'Yes, I think it is the lighthouse.'

"'But then you must see the city.'

"'I do not see the city.'

"'You do not see the city?'

"'I do not see the city.'

"There's a typical quotation from your Belgian Shakspeare," he commented, as he returned the book to the shelf.

"Well, may it not be questioned whether it is quite fair to quote little extracts from a play like that? But to return to the novels. Don't you think it is rather a melancholy thing that the reader of the present day should prefer superficial story tellers to writers who aim at getting to the bottom of things—at the realities of life?"

The old man made no reply. He went back to the bookshelf, and after a short search he drew from it an old dust-laden volume. Then, after turning over the leaves, and adjusting his spectacles, he said:

"'I conceive, therefore, as the business of being profound, that it is with writers as with wells; a person with good eyes may see to the bottom of the deepest, provided any water be there; and often, when there is nothing in the world at the bottom besides dryness and dirt, though it be but a yard and a half underground, it shall pass however for wondrous deep, upon no wiser a reason than because it is wondrous dark.'"

**Moralizing in Sunday-school Instruction.**

W. G. Hervey, in Review of Reviews.

The besetting sin of religious teaching is, as every one knows, the vice of inappropriate and impertinent moralizing. Every lesson, it is thought, must end with a moral, just as it used invariably to begin with the time-honored question, "What was the subject of our last lesson?" And there are signs that it is still commonly believed that the more morals you can extract from a single passage the better. It is the principle of the old commentators, who seemed to think that you don't learn unless you know you learn and know what you learn and can say it in terms, and that whether you have learned or not is of less importance than to be able to state what you ought to learn or have learned. In these days, however, it is counted a mark of pedigogical good breeding not to display in the presence of children morals that are insufficiently clothed in their proper habiliments of imagery and human interest. It is to be said for these lessons that they sin against these principles less than most. There is but one personal application in each lesson. The points for the most part follow naturally from the subject of the lesson, and particularly from the "lesson hymn," which is almost always well chosen. But, on the whole, the impression created by a careful study of these lessons is that they deal too much with words and too little with imagery; they do not find the child where he is and work out from him. There is the effort to adjust him to something, rather than to adapt something to him. The law of self-activity is violated. And the truths inculcated, having no depth of earth and being so many, have the less chance of taking root and bearing fruit.

The first thermometer was made in 1621 by a Dutch physicist named Cornelius Van Drebbell, and consisted of a tube filled with air closed at its upper end and dipping at its other extremity, which was open, in a bottle of nitric acid diluted with water. As the temperature rose or fell the air in the tube increased or grew less in volume, and consequently the liquid descended or rose.